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TITLE: Cryptographic encoded ticket issuing and collection system for remote purchasers
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INVENTOR-INFORMATION:

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ABSTRACT: A cryptographic encoded, ticket issuing and collection system for real-time purchase of tickets by purchasers at remote user stations in an information network that includes a plurality of remote user stations coupled to a server in an information network, e.g., the Internet, for purchase of services, products, or tickets to an event. An operator of the remote user station selects a ticket for purchase to an event using standard protocols of information network. An electronic ticket is transmitted to the operator and includes a cypher code created using a public key cryptography system. The operator displays the electronic ticket for verification purposes and proceeds to print out the ticket at the station. The ticket is presented to a ticket collector whereupon the ticket is scanned by a portable terminal for decoding the cypher code using a public key reloaded into the terminal by the producers of the event. The decoded cypher code is compared against the event description stored in the portable terminal and if equal, the ticket is accepted for admission to the event. The ticket information is stored in the portable terminal and subsequently uploaded to the information system to check for duplicate tickets.
12 Claims,   4 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

ABPL: A cryptographic encoded, ticket issuing and collection system for real-time purchase of tickets by purchasers at remote user stations in an information network that includes a plurality of remote user stations coupled to a server in an information network, e.g., the Internet, for purchase of services, products, or tickets to an event. An operator of the remote user station selects a ticket for purchase to an event using standard protocols of information network. An electronic ticket is transmitted to the operator and includes a cypher code created using a public key cryptography system. The operator displays the electronic ticket for verification purposes and proceeds to print out the ticket at the station. The ticket is presented to a ticket collector whereupon the ticket is scanned by a portable terminal for decoding the cypher code using a public key reloaded into the terminal by the producers of the event. The decoded cypher code is compared against the event description stored in the portable terminal and if equal, the ticket is accepted for admission to the event. The ticket information is stored in the portable terminal and subsequently uploaded to the information system to check for duplicate tickets.

BSPR: None of the prior art discloses a hybrid electronic ticket issuing system for mass purchases by remote users where the tickets are distributed electronically and include cypher code for authenticating the use of the tickets by a holder via portable terminals decrypting, validating and recording the cipher coded tickets, the recorded ticket collection information subsequently checked

for duplication by uploading to a host system.

BSPR: These and other objects, features and advantages of the present invention are achieved in a distributed information network, for example, the Internet, and portable collection terminals for generating, distributing and collecting cypher-coded tickets personalized to the purchaser through cryptographic techniques. A remote purchaser inter acts with a designated server on the Internet to purchase and print out, using a standard PC assembly, a cypher-coded ticket for an event or service or product or the like, offered by a seller at a web site on the Internet. The purchaser supplies the purchase details for the event and the seller, after confirmation of space available for the event, transmits a cypher-coded electronic ticket tied to the event for display by the purchaser on the standard PC assembly. After approval, the purchaser prints out a hard copy of the cypher-coded electronic ticket tied to the event for presentation to the ticket collectors at the event. The ticket collectors use a portable terminal pre-loaded with an asymmetric or symmetric key for decrypting the code in the ticket. The decrypted code is evaluated to ensure that the ticket is valid, after which the ticket information is stored in the terminal. From time to time, the terminal is uploaded to an information processor system to check the stored collected ticket information for duplicate tickets. The asymmetric keys stored in the encoded ticket and at the terminal are changed for each event to prevent ticket fraud.

DRPR: FIG. 3 is a block diagram of a portable terminal for accepting and authenticating cypher-coded tickets used by a remote user for an admission to an event.

DRPR: FIG. 4 is a flow diagram of a process for implementing the system of FIG. 1 for issuing cypher-coded tickets through the system of FIG. 1 and authenticating such tickets using the portable terminal of FIG. 3.

DEPR: In FIG. 3, the portable terminal 27 includes a scanning element 29, such as a laser light, which is activated by the operator for scanning a ticket 31 including a bar code 33 representing cypher code definitive of the ticket information in an asymmetric cryptographic system. The scanning element generates a coherent light beam 35 which is reflected off the bar code 33 and picked up by an optical receiver 37. A processor 39 receives an output from the receiver 37 and checks the bar code against an asymmetric key stored in a memory 40 and assigned to the event by the seller. Using an asymmetric key assigned by the seller to the event, the bar code is decoded and compared against an event description stored in the memory 40. If the event description and decoded cypher code compare, the ticket is authenticated and the holder is granted admission to the event. If the event description and the decoded cypher code do not compare, the ticket holder is denied admission to the event. Ticket information from authenticated tickets is stored in the memory 40 and periodically uploaded through a communication unit 43 to a central information system 45 (See FIG. 1).

DEPR: The process is initiated in a step 401 in which an operator of a remote user station contacts a web site 18 through a server 14 using the Internet service provider communication package application and the web browser. The web site contains a description of the events and provide

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the details of date, time, seats, etc., which are transmitted to the operator for presentation in a screen in display 23. The screen provides the purchaser with the protocol for making a selection of a ticket request which is transmitted to the web site and in a step 403, checked for availability. If the event or ticket request details are not available, the web site will initiate an operation 405 to notify the purchaser of the ticket request that it is not available, after which the program will end. If the ticket details are available, an operation 407 is initiated by the web site to determine an applicable cypher code related to an asymmetric key for incorporation into an electronic ticket to be transmitted to the purchaser. The cypher code and asymmetric key are reloaded into the web site by the producers for each event. In an operation 409, the web site prepares the electronic ticket in Hypertext Markup Language (HTML) including the asymmetric key in a bar code 31 for transmission to the purchaser in an operation 411. The purchaser displays and verifies the ticket information against his request in an operation 413. After aceptance by the purchaser, the ticket 31 including the bar code for the event is printed out by the printer 19 in an operation 415. The ticket is presented to a ticket collector in an operation 417 for admission to the event at the time, date and location specified in the ticket. In an operation 419, the ticket collector uses the portable terminal 27 to scan the ticket information for admission to the event. The ticket is accepted by the collector if the bar code, when decoded, using the asymmetric key programmed for the date, corresponds to the ticket information stored in the memory 41 of the terminal 27. The accepted ticket information is stored in the terminal memory 41 in an operation 421 and subsequently, transmitted to the information system 45 in an operation 423 to check for duplicate tickets, after which the process ends.